F1
Dup G1

SEQUENCE LISTING

<110> Grainger, David J.
Tatalick, Lauen Marie

<120> Compounds and methods to inhibit or augment an inflammatory response.

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<140> US 08/927939
<141> 1997-09-11

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Ala Ser Tyr Arg Arg Ile Thr Ser Ser Lys Cys Pro Lys Glu Ala Val
50 55 60
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Pro Lys Thr

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Gly Lys Glu Val Cys Ala Asp Pro Lys Glu Arg Trp Val Arg Asp Ser
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Thr Cys Cys Tyr Arg Phe Ile Asn Lys Lys Ile Pro Lys Gln Arg Leu
        35   40   45
Glu Ser Tyr Arg Arg Thr Thr Ser Ser His Cys Pro Arg Glu Ala Val
    50   55   60
Ile Phe Lys Thr Lys Leu Asp Lys Glu Ile Cys Ala Asp Pro Thr Gln
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Pro Lys Leu

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Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln Asn Phe Ile Ala
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Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys Pro Gly Val Ile Phe
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Ala Cys Cys Phe Ser Tyr Thr Ala Arg Lys Leu Pro Arg Asn Phe Val
        35   40   45
Val Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala Val Val
    50   55   60
Phe Gln Thr Lys Arg Ser Lys Gln Val Cys Ala Asp Pro Ser Glu Ser
65   70   75   80
Trp Val Gln Glu Tyr Val Tyr Asp Leu Glu Leu Asn
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<213> Homo sapiens

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            20                  25                  30
Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His Ile Lys
        35                  40                  45
Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val Val Phe
    50                  55                  60
Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys Lys Trp
65                  70                  75                  80
Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser
                85                  90
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<213> Homo sapiens

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            20                  25                  30
Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys
        35                  40                  45
Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys
    50                  55                  60
Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln
65                  70                  75                  80
Glu Tyr Leu Glu Lys Ala Leu Asn Lys
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<213> Homo sapiens

<400> 23

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            20                  25                  30
Arg Cys Gln Cys Ile Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe
        35                  40                  45
Ile Lys Glu Leu Arg Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr
    50                  55                  60
Glu Ile Ile Val Lys Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro
65                  70                  75                  80
Lys Glu Asn Trp Val Gln Arg Val Val Glu Lys Phe Leu Lys Arg Ala
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Glu Asn Ser
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            20                  25                  30
Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr
        35                  40                  45
Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser
    50                  55                  60
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn
65                  70                  75                  80
Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys Lys Ile
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Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn
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<400> 25

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            20                  25                  30
Cys Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser
        35                  40                  45
Tyr Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe
    50                  55                  60
Lys Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp
65                  70                  75                  80
Val Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys
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            20                  25                  30
Thr Cys Cys Tyr Ser Phe Thr Ser Lys Met Ile Pro Met Ser Arg Leu
        35                  40                  45
Glu Ser Tyr Lys Arg Ile Thr Ser Ser Arg Cys Pro Lys Glu Ala Val
    50                  55                  60
Val Phe Val Thr Lys Leu Lys Arg Glu Val Cys Ala Asp Pro Lys Lys
65                  70                  75                  80
Glu Trp Val Gln Thr Tyr Ile Lys Asn Leu Asp Arg Asn Gln Met Arg
                85                  90                  95
Ser Glu Pro Thr Thr Leu Phe Lys Thr Ala Ser Ala Leu Arg Ser Ser
            100                 105                 110
Ala Pro Leu Asn Val Lys Leu Thr Arg Lys Ser Glu Ala Asn Ala Ser
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145
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<400> 27
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Rule 61

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Leu Cys Leu Leu Leu Met Thr Ala Ala Phe Asn Pro Gln Gly Leu Ala
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cag cca gat gca ctc aac gtc cca tct act tgc tgc ttc aca ttt agc 150
Gln Pro Asp Ala Leu Asn Val Pro Ser Thr Cys Cys Phe Thr Phe Ser
25 30 35

agt aag aag atc tcc ttg cag agg ctg aag agc tat gtg atc acc acc 198
Ser Lys Lys Ile Ser Leu Gln Arg Leu Lys Ser Tyr Val Ile Thr Thr
40 45 50 55

agc agg tgt ccc cag aag gct gtc atc ttc aga acc aaa ctg ggc aag 246
Ser Arg Cys Pro Gln Lys Ala Val Ile Phe Arg Thr Lys Leu Gly Lys
60 65 70

gag atc tgt gct gac cca aag gag aag tgg gtc cag aat tat atg aaa 294
Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln Asn Tyr Met Lys
75 80 85

cac ctg ggc cgg aaa gct cac acc ctg aag act tgaactctgc tacccctact 347
His Leu Gly Arg Lys Ala His Thr Leu Lys Thr
90 95

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gtg ctg acc gcg ctc tgc ctc agc gac ggg aag ccc gtc agc ctg agc      160
Val Leu Thr Ala Leu Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser
            15                  20                  25

tac aga tgc cca tgc cga ttc ttc gaa agc cat gtt gcc aga gcc aac      208
Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn
        30                  35                  40

gtc aag cat ctc aaa att ctc aac act cca aac tgt gcc ctt cag att      256
Val Lys His Leu Lys Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile
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gta gcc cgg ctg aag aac aac aac aga caa gtg tgc att gac ccg aag      304
Val Ala Arg Leu Lys Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys
60                  65                  70                  75

cta aag tgg att cag gag tac ctg gag aaa gct tta aac aag agg ttc      352
Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe
                80                  85                  90

aag atg tgagagggtc agacgcctga ggaaccctta cagtaggagc ccagctctga      408
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catgtattta agctttaatg tgtgtaccta taaagaagag ggaagcagga agaaatccct   2260
tcagcttgca gagtttatca taggctggtt gaagtcagag aaaaatagaa taaaagaaaa   2320
ggaacgaaga agggaagaaa gggagaaaag gaggagggag gaggaagaag gagggaagag   2380
agagtcagga gaaagggcga aagagtggga tggggtaagg catggatgcc tccttgcctg   2440
agcctaacca atactgtgag cagtgcataa atgcaggatt tcgtaactga caagttgcag   2500
atctctcttt accatgacca agatattcaa acactcagcc ctatgatacg atgggatgcg   2560
tctctccaca gatcagacag ggtctgctaa acactacctc atccatttta agtgcctaaa   2620
atgaaaccgt gtgctgacct tcctggctct ccccctctct tcctgcag gg atc cct      2676
                                                  Gly Ile Pro

ctc gca agg acg gtc cgc tgc aac tgc atc cat atc gat gac ggg cca      2724
Leu Ala Arg Thr Val Arg Cys Asn Cys Ile His Ile Asp Asp Gly Pro
     25                  30                  35

gtg aga atg agg gcc ata ggg aag ctt gaa atc atc cct gcg agc cta      2772
Val Arg Met Arg Ala Ile Gly Lys Leu Glu Ile Ile Pro Ala Ser Leu
 40                  45                  50                  55

tcc tgc cca cgt gtt gag atc at gtgagtacaa gcccacctgc cgataaacgt      2825
Ser Cys Pro Arg Val Glu Ile Ile
                60

ccctcccgta accacacagt aaataagtga gggaaaccag gaaagatggg gacgggtctg   2885
tgactctaac taaggcacag tgcctgaact ctgacatgga cctgcagggc catcagctct   2945
gttggcctga cgttaatctg agtatctcac tcttatttct atag t gcc acg atg       2999
                                                    Ala Thr Met
                                                     65

aaa aag aat gat gag cag aga tgt ctg aat ccg gaa tct aag acc atc      3047
Lys Lys Asn Asp Glu Gln Arg Cys Leu Asn Pro Glu Ser Lys Thr Ile
            70                  75                  80

aag aat tta atg aaa gcg ttt agc caa aaa ag gtaggtttga tgttgctttt    3099
Lys Asn Leu Met Lys Ala Phe Ser Gln Lys Arg
         85                  90

tcaggaaatg gtggtctggg gagcagcgcc tgccctgggc tttgctgtgg gcatctgccc   3159
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taaactcatg gcaccggcat gtgcctttgt ctctccattt acacagacac tgaggtgcct   3219
tcttaggtca tacattccta gtgtctagaa gtggagcagt tattatacct gtcacgggta   3279
aagctgccaa atgcccaccc ccccacttcc tcacttaaaa aaaaaaaacc aaaaacaaac   3339
aaacccattc tgtcccctca acccccaccc acccgtgacc catggagatt gtgtagcaga   3399
ggaaaatgca ccaggcctct tgccccaggg tctttgggtt ccaaagtgaa agcagagtct   3459
atccgctcaa tacagtttcc tcttcctaca g g tct aaa agg gct cct             3506
                                  Ser Lys Arg Ala Pro
                                       95

taactggaga gaagccacgc acacaccccg gtgctgtgat ggacagcaga gagcctgtct   3566
ctccatcact ccccttacc cagtggatgg ctagtcctaa ttgcccttgg tcttctgaaa   3626
ggtgaccagc cgtggtcaca tcagctgcta ctcctcctgc aggatgatgg ttaagccatg   3686
gtcctgagac aaaagtaact gccgaagcaa gaattcttta agggctggtc tgagtcctca   3746
ctcaagtggc tgggatggct gtcctagctc tgtactgtaa gctatgtgga ggtgcgacgc   3806
ccttcaccat gtgccacgcc ccaggctgct ccccacaccc tccttgtcct ccctagctca   3866
ggctcgtcag ttctgagttt acctgagctc ttttatttca gatgtaagac tacaaattta   3926
agtttgtaag gacaaactta accaccatct tcccaagggg ttatcaagat actcagagga   3986
acctggaaat gtatgtgtaa atactattta atgaacgact gtacaaagta gaattcctag   4046
atgtattttt tgtatgcttt gcattgtata tggaagaact tgtgtcatca agtatgtatc   4106
aatgggtagt taaagtttat ttttaaaacc gtccaatacc ttttgtatta tgtaacattc   4166
aaaagacaat gtactgtatt gaaagtagta agagacccaa aatgtaataa agtaataata   4226
actgacatga aatggtcatg tgactgagaa ttc                               4259
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<210> 31
<211> 1081
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (43)...(363)

<400> 31

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ctctcctcct cgcacagccg ctcgaaccgc ctgctgagcc cc atg gcc cgc gcc       54
                                              Met Ala Arg Ala
                                               1

acg ctc tcc gcc gcc ccc agc aat ccc cgg ctc ctg cgg gtg gcg ctg      102
Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu Arg Val Ala Leu
 5                  10                  15                  20

ctg ctc ctg ctc ctg gtg gcc gcc agc cgg cgc gca gca gga gcg ccc      150
Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala Ala Gly Ala Pro
                25                  30                  35

ctg gcc act gaa ctg cgc tgc cag tgc ttg cag acc ctg cag gga att      198
Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln Gly Ile
            40                  45                  50

cac ctc aag aac atc caa agt gtg aag gtg aag tcc ccc gga ccc cac      246
His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser Pro Gly Pro His
        55                  60                  65

tgc gcc caa acc gaa gtc ata gcc aca ctc aag aat ggg cag aaa gct      294
Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly Gln Lys Ala
    70                  75                  80

tgt ctc aac ccc gca tcg ccc atg gtt aag aaa atc atc gaa aag atg      342
Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile Ile Glu Lys Met
 85                  90                  95                  100

ctg aaa aat ggc aaa tcc aac tgaccagaag gaaggaggaa gcttattggt         393
```

```
Leu Lys Asn Gly Lys Ser Asn
                105

ggctgttcct gaaggaggcc ctgcccttac aggaacagaa gaggaaagag agacacagct     453
gcagaggcca cctggattgc gcctaatgtg tttgagcatc acttaggaga agtcttctat     513
ttatttattt atttatttat ttgtttgttt tagaagattc tatgttaata ttttatgtgt     573
aaaataaggt tatgattgaa tctacttgca cactctccca ttatatttat tgtttatttt     633
aggtcaaacc caagttagtt caatcctgat tcatatttaa tttgaagata gaaggtttgc     693
agatattctc tagtcatttg ttaatatttc ttcgtgatga catatcacat gtcagccact     753
gtgatagagg ctgaggaatc caagaaaatg gccagtgaga tcaatgtgac ggcagggaaa     813
tgtatgtgtg tctattttgt aactgtaaag atgaatgtca gttgttattt attgaaatga     873
tttcacagtg tgtggtcaac atttctcatg ttgaagcttt aagaactaaa atgttctaaa     933
tatcccttgg acattttatg tctttcttgt aaggcatact gccttgttta atgttaatta     993
tgcagtgttt ccctctgtgt tagagcagag aggtttcgat atttattgat gttttcacaa    1053
agaacaggaa aataaaatat ttaaaaat                                       1081

      <210> 32
      <211> 1173
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> CDS
      <222> (107)...(448)

      <400> 32
cggcacgagc acagtgctcc ggatcctcca atcttcgctc ctccaatctc cgctcctcca      60
cccagttcag gaacccgcga ccgctcgcag cgctctcttg accact atg agc ctc         115
                                                 Met Ser Leu
                                                   1

ctg tcc agc cgc gcg gcc cgt gtc ccc ggt cct tcg agc tcc ttg tgc         163
Leu Ser Ser Arg Ala Ala Arg Val Pro Gly Pro Ser Ser Ser Leu Cys
     5                  10                  15

gcg ctg ttg gtg ctg ctg ctg ctg ctg acg cag cca ggg ccc atc gcc         211
Ala Leu Leu Val Leu Leu Leu Leu Leu Thr Gln Pro Gly Pro Ile Ala
 20                  25                  30                  35

agc gct ggt cct gcc gct gct gtg ttg aga gag ctg cgt tgc gtt tgt         259
Ser Ala Gly Pro Ala Ala Ala Val Leu Arg Glu Leu Arg Cys Val Cys
                 40                  45                  50

tta cag acc acg cag gga gtt cat ccc aaa atg atc agt aat ctg caa         307
Leu Gln Thr Thr Gln Gly Val His Pro Lys Met Ile Ser Asn Leu Gln
             55                  60                  65

gtg ttc gcc ata ggc cca cag tgc tcc aag gtg gaa gtg gta gcc tcc         355
Val Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu Val Val Ala Ser
         70                  75                  80

ctg aag aac ggg aag gaa att tgt ctt gat cca gaa gcc cct ttt cta         403
Leu Lys Asn Gly Lys Glu Ile Cys Leu Asp Pro Glu Ala Pro Phe Leu
     85                  90                  95

aag aaa gtc atc cag aaa att ttg gac ggt gga aac aag gaa aac             448
Lys Lys Val Ile Gln Lys Ile Leu Asp Gly Gly Asn Lys Glu Asn
100                 105                 110

tgattaagag aaatgagcac gcatggaaaa gtttcccagt ctacagcaga gaagttttct     508
ggaggtctct gaacccaggg aagacaagaa ggaaagattt tgttgttgtt tgtttatttg     568
gtttccccag tagttagctt tcttccctgg attcctcact tttgaagagt gtgaggaaaa     628
```

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cctatgtttg gcgcttaagc tttcagctca gcttaatgaa gtgtttagca tagtacctct    688
gctatttgct gttattttat ctgctatgct attgaagttt tggcaattga ctatagtgtg    748
agccaggaat cactggctgt taatcttaca aagtgtcttg gaattgtagg tgactattat    808
ttttccaaga aatatcccct aagatattaa ctgagaaggc tgggggttta atgtggaaat    868
gatgtttcaa aaggaatcct gtgatggaaa tacaactggt atcttcactt ttttaggaat    928
tgggaaatat tttaatgttt cttggggaat atgttagaga attcccttac tcttgattgt    988
gggatactat ttaattattt cactttagaa agctgagtgt ttcacacctt atctatgtag   1048
aatatatttc cttattcaga atttctaaaa gtttaagttc tatgagggct aatatcttat   1108
cttcctataa ttttagacat tgctttaact ttttagtaaa aaaaaaaaaa aaaaaaaaaa   1168
aaaaa                                                               1173
```

<210> 33
<211> 825
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (34)...(327)

<400> 33

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acattgtgaa atctccaact cttaaccttc aac atg aaa gtc tct gca gtg ctt      54
                                    Met Lys Val Ser Ala Val Leu
                                     1               5

ctg tgc ctg ctg ctc atg aca gca gct ttc aac ccc cag gga ctt gct      102
Leu Cys Leu Leu Leu Met Thr Ala Ala Phe Asn Pro Gln Gly Leu Ala
         10                  15                  20

cag cca gat gca ctc aac gtc cca tct act tgc tgc ttc aca ttt agc      150
Gln Pro Asp Ala Leu Asn Val Pro Ser Thr Cys Cys Phe Thr Phe Ser
     25                  30                  35

agt aag aag atc tcc ttg cag agg ctg aag agc tat gtg atc acc acc      198
Ser Lys Lys Ile Ser Leu Gln Arg Leu Lys Ser Tyr Val Ile Thr Thr
 40                  45                  50                  55

agc agg tgt ccc cag aag gct gtc atc ttc aga acc aaa ctg ggc aag      246
Ser Arg Cys Pro Gln Lys Ala Val Ile Phe Arg Thr Lys Leu Gly Lys
                 60                  65                  70

gag atc tgt gct gac cca aag gag aag tgg gtc cag aat tat atg aaa      294
Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln Asn Tyr Met Lys
             75                  80                  85

cac ctg ggc cgg aaa gct cac acc ctg aag act tgaactctgc tacccctact    347
His Leu Gly Arg Lys Ala His Thr Leu Lys Thr
         90                  95

gaaatcaagc tggagtacgt gaaatgactt ttccattctc ctctggcctc ctcttctatg    407
ctttggaata cttctaccat aattttcaaa taggatgcat tcggttttgt gattcaaaat    467
gtactatgtg ttaagtaata ttggctatta tttgacttgt tgctggtttg gagtttattt    527
gagtattgct gatcttttct aaagcaaggc cttgagcaag taggttgctg tctctaagcc    587
cccttccctt ccactatgag ctgctggcag tgggttgtat tcggttccca ggggttgaga    647
gcatgcctgt gggagtcatg gacatgaagg gatgctgcaa tgtaggaagg agagctcttt    707
gtgaatgtga ggttgttgct aaattattgt ttattgtgga aagatgaatg caatagtagg    767
actgctgaca ttttgcagaa aatacatttt atttaaaatc tcctaaaaaa aaaaaaaa      825
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<210> 34
<211> 3112
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1192)...(1267)

<221> CDS
<222> (1953)...(2067)

<221> CDS
<222> (2488)...(2575)

<400> 34

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ttagagactt aataataaag gatcttgtgg ataatttatc attccctgat agagaaaaat      60
ttagctttgc ttattttaga gttataaatg atgctgggtc aggtatcttt atgtttgaag     120
atggctccat atttgggttg tttccacaga actctttccc agaaatgctt tttctaggtt     180
aatggctaca catatttcta ggcacctgac atactgacac ccacctctaa agtattttta     240
tgatccacaa ctagcgttta acacagcgcc ccagtcactc cgagactaat aaatagacaa     300
atgactgaaa cgtgacctca tgctttctat tcctccagct ttcattgagt tcctttcctc     360
tgggaggact gggggttgtc tagccctcca cagcatcagc ccattgaccc tatccttgtg     420
gttatagcag ctgaggaagc agaattacag ctctgtggga aggaatgggg ctggagagtt     480
catgcataga ccaattcttt ttttttttt ttttgagat ggagtttcac ttttgttgcc      540
caggctggag tgcaatggca tgatctcagc tcaccacagc ccccacctcc tgggttcaag     600
cgattctcct gccctcagcc tcccgagtag ctgggattac aggcatgtgc caccacgcct     660
gactactttt gtatttttag tagagatgga gtttctcttt cttggtcagg ttggtctcaa     720
actcctgacc tcaggtgatc cgcagcctcg gcctcccaaa gtgttgggat tacaggtgtg     780
agcgaccatg cctggctgca tagaccagtt cttatgagaa gggatcaact aagaatagcc     840
ttgggttgac acacacccct cttcacactc acaggagaaa ccccatgaag ctagaaccag     900
tcatgagttg agagctgaga gttagagagt agctcagaga tgctattctt ggatatcctg     960
agcccctgtg gtcaccaggg accctgagtt gtgcaacact cagcatgaca gcatcactac    1020
acttaaaaat ttccctcctc accccagat tccatttccc catccgccag ggctgcctat     1080
aaagaggaga gatggcttca gacatcagaa ggacgcaggc agcaaagagt agtcagtccc    1140
ttcttggctc tgctgacact cgagcccaca ttccatcacc tgctcccaat c atg cag     1197
                                                          Met Gln
                                                           1

gtc tcc act gct gcc ctt gcc gtc ctc ctc tgc acc atg gct ctc tgc      1245
Val Ser Thr Ala Ala Leu Ala Val Leu Leu Cys Thr Met Ala Leu Cys
         5                  10                  15

aac cag gtc ctc tct gca cca c gtgagtccat gttgttgttg tgggtatcac       1297
Asn Gln Val Leu Ser Ala Pro
     20                  25

cactctctgg ccatggttag accacatcag tctttttttg cggcctgaga gccccgaaga    1357
gaaaagaagg aagttcttaa agcgctgcca aacaccttgg tctttttctt cacaactttt    1417
atttttatct ctagaagggg tcttagccct cctagtctcc aggtatgaga atctaggcag    1477
gggcagggga gttacagtcc cttgtacaga tagaaaaaca gggttcaaaa cgaatcagtt    1537
tgcaagaggc agaatccagg gctgcttact tcccagtggg gtctgttgtt cactctccag    1597
ctcaccctag gtctcccagg agccctgtcc cttggatgtc ttatgagaga tgtccagggc    1657
ttctcttggg ctggggtatg acttcttgaa ccgacaaaat tccatgaaga gagctaagag    1717
aacagtccat tcaggtatct ggatcacata gagaaacaga gaacccacta tgaagagtca    1777
aggggaaaga ggaatataga cagaaacaaa gagacatttc tctgcaaaac cccccaaatg    1837
ccttgcagtc acttggtctg agcaagcctg ccctcctcaa ccactcaggg atcagaagct    1897
gcctggcctt ttcttctgag ctgtgactcg ggcttattct ctcctttctc cgcag tt      1954
                                                              Leu

gct gct gac acg ccg acc gcc tgc tgc ttc agc tac acc tcc cga cag      2002
Ala Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln
            30                  35                  40

att cca cag aat ttc ata gct gac tac ttt gag acg agc agc cag tgc      2050
Ile Pro Gln Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys
```

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        45                  50                  55

tcc aag ccc agt gtc at gtaagtgcca gtcttcctgc tcacctctag              2097
Ser Lys Pro Ser Val Ile
     60

ggaggtaggg agtgtcaggg tgggggcaga aacaggccag aaggccatcc tggaaaggcc    2157
cagccttcag gagcctatcg gggatacagg acgcagggca ctgaggtgtg acctgacttg    2217
gggctggagt gaggtgggtg ttacagagtc aggaagggct gccccaggcc agaggaaagg    2277
aacaggaaga aggaggcagc aggacactct gagggccccc ttgcctggag tcactgagag    2337
aagctctcta gacggagata ggcagggggc ccctgagaga ggagcaggcc ttgagctgcc    2397
caggacagag agcaggatgt caggccatgg tgggcccagg attccccggc tggattcccc    2457
agtgcttaac tcttcctccc ttctccacag c ttc cta acc aag aga ggc cgg       2509
                                  Phe Leu Thr Lys Arg Gly Arg
                                   65                  70

cag gtc tgt gct gac ccc agt gag gag tgg gtc cag aaa tac gtc agt      2557
Gln Val Cys Ala Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser
            75                  80                  85

gac ctg gag ctg agt gcc tgaggggtcc agaagcttcg aggcccagcg            2605
Asp Leu Glu Leu Ser Ala
         90

acctcagtgg gcccagtggg gaggagcagg agcctgagcc ttgggaacat gcgtgtgacc    2665
tctacagcta cctcttctat ggactggtta ttgccaaaca gccacactgt gggactcttc    2725
ttaacttaaa ttttaattta tttatactat ttagttttta taatttattt ttgatttcac    2785
agtgtgtttg tgattgtttg ctctgaggagt tccccctgtc ccctccacct tccctcacag    2845
tgtgtctggt gacgaccgag tggctgtcat cggcctgtgt aggcagtcat ggcaccaaag    2905
ccaccagact gacaaatgtg tatcagatgc ttttgttcag ggctgtgatc ggcctgggga    2965
aataataaag atgttctttt aaacggtaaa ccagtattga gtttggtttt gtttttctgg    3025
caaatcaaaa tcactagtta agaggaatca taggcaaaga ttaggaagag gtgaaatgga    3085
gggaaactgg gagagatggg gagcgct                                       3112

      <210> 35
      <211> 481
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> CDS
      <222> (55)...(333)

      <400> 35
agcctctgaa gctcccacca ggccagctct cctcccacaa cagcttccca cagc atg       57
                                                          Met
                                                           1

aag atc tcc gtg gct gcc att ccc ttc ttc ctc ctc atc acc atc gcc      105
Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile Ala
            5                  10                  15

cta ggg acc aag act gaa tcc tcc tca cgg gga cct tac cac ccc tca      153
Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro Ser
         20                  25                  30

gag tgc tgc ttc acc tac act acc tac aag atc ccg cgt cag cgg att      201
Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg Ile
     35                  40                  45

atg gat tac tat gag acc aac agc cag tgc tcc aag ccc gga att gtc      249
Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile Val
```

```
 50                  55                  60                  65

ttc atc acc aaa agg ggc cat tcc gtc tgt acc aac ccc agt gac aag      297
Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp Lys
                 70                  75                  80

tgg gtc cag gac tat atc aag gac atg aag gag aac tgagtgaccc           343
Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn
             85                  90

agaaggggtg gcgaaggcac agctcagaga cataaagaga agatgccaag gccccctcct    403
ccacccaccc ctaactctca gccccagtca ccctcttgga gcttccctgc tttgaattaa    463
agaccactca tgctcttc                                                 481

      <210> 36
      <211> 3709
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> CDS
      <222> (885)...(960)

      <221> CDS
      <222> (2149)...(2260)

      <221> CDS
      <222> (3383)...(3482)

      <400> 36
tctagaaaaa aaaaaacaaa aagggaaaat tcccctggca ggactctcag atgctgctga     60
gtagctctca gtcctctctg taacccaaac ataacacatc tatctccgtg cttacactgg    120
gtggctttca cttgtttatc tgtgaattga agagaagttg cttgaggtca ggcagtgctc    180
ctcattggta actgccttct ctggggctaa ccaaggacct agaacagaat aagctattga    240
aaattgttga ggattgaaaa aaatagaaaa aatagaaatg gcaaatatct aggccagtca    300
ctggacatag agaatgttat ttaattctta tcgcacgtcc ttgagacatg tattgctatt    360
tgcattttgt gtgaatatgc atttgggtaa gtttatgtaa tccctcctct gcagaactgg    420
gattcaaatg caggtgtatc tctgttcagg tccagactct tctgccctga agcagtagta    480
cttggatgga atgacgtagg gttggacaag ccacacagag gccacttcct ctcacttact    540
tttctttgct tcccactcaa ccaggacagt tcccacgcac tttttcaaga ttcttatctg    600
ctcccacact tggggaagtt cccaatgcaa cctatcaatc catcaccacc acgaatacca    660
gccaggagag gtggggaaag gagtttacca catggtcgct gggtgtgagc aactgttccc    720
tgtccctatg gcttcccact tgtggctccc accatggcct ggagttttgg gtggagtttt    780
tcaaataaaa gccctcagca ttgcaggacg gcacagtggt gagctcttag cttcaccagg    840
ctcatcaaag ctgctccagg aaggcccaag ccagaccaga agac atg cag atc atc     896
                                                 Met Gln Ile Ile
                                                  1

acc aca gcc ctg gtg tgc ttg ctg cta gct ggg atg tgg ccg gaa gat      944
Thr Thr Ala Leu Val Cys Leu Leu Leu Ala Gly Met Trp Pro Glu Asp
 5                  10                  15                  20

gtg gac agc aag agc a gtgagtgtgg caggcatcat tttgcttctc tctggggagg   1000
Val Asp Ser Lys Ser
                25

gcagaaacgt ggtcagccac tctggggttg gagcaggctt ctccttgaac tcaccaactc   1060
tatctcccct cttcctacct aaagaggagg aatggtgaac ttggacaggc tggggtgagg   1120
gctagtagga gaaccatgag ttggggcaaa cacagagaac tgaactgaca gcttcagtac   1180
aaggagctct gcttcatcca gacccaagga agggaacctg tgaggttact cgggtaaagc   1240
tgggaggccc aaggtccagg ggacagcctg ggtgtagctt ctacagtgtg acagacacca   1300
agtagagtca gaaggcaaga ccgggctcta acaattggtc actcttgggc aagtcacttt   1360
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agctctcaaa ctctactttc tctatcagtg aaatggagtt gatgatgtct gccctccaag   1420
actgtttgga gaataccaac ctagtaagag gcatgaaagg gggtgcaaac agaaaaacta   1480
ggaggaagaa gctgggattg gaatgcaggt ctcttgcggg atgtggtgtg ggaggagaat   1540
gcacaaatgg acagagtggg ggttgggggc tgggaaagag ctaaggacca gggcaggagg   1600
ggattcaaga gactgagtag ggcagctagc tagttcctgg gagctcttcc cttgtcatct   1660
catcagtttg gactcctcga acaattccta atcttcccca gatcaggtct gtgaactgtg   1720
gaccactgtg tcctgcatca gactaaccag gtccccaggg tgtggggtcc agagcccttg   1780
gacatgaata ctggggcaga accatgcaca tgtggtgaaa taccaaaact ggatgagcct   1840
ttagaaacca ggctccaaaa agttttattt tacagatggg aagtctgggg ccagggtgaa   1900
ggcacatctt cctcagggcc actcagctgg ggtgcgggga gctcagatct gaaccccaat   1960
cttctgactc tttacctagc cccagaacaa ggtggctgat gaggcagagc tatgccggca   2020
ccgtctggat gtggtcccca agccagggct tgtcctggga ggcgtttttt tgtttgtttt   2080
ttaaaaattg tgctacaggt gagaggttga gaaatggatg caaaccatcg tctgtgttcc   2140
tcttctag tg cag gta ccc ttc tcc aga tgt tgc ttc tca ttt gcg gag      2189
        Met Gln Val Pro Phe Ser Arg Cys Cys Phe Ser Phe Ala Glu
                        30                  35

caa gag att ccc ctg agg gca atc ctg tgt tac aga aat acc agc tcc     2237
Gln Glu Ile Pro Leu Arg Ala Ile Leu Cys Tyr Arg Asn Thr Ser Ser
 40                  45                  50                  55

atc tgc tcc aat gag ggc tta at gtaagtgatc acctgctcaa tctctcccta     2290
Ile Cys Ser Asn Glu Gly Leu Ile
                60

gagaacagaa ccccgccagc ctggaatttac aagagtagac actagatgac agtattttac   2350
tggaataagg tttctaaacc cagagctgcc agcacctggg tgcaagccac acttgggcgc   2410
tagagggagc gctgagcttc ctagcaggtg tgaggaagga tgcatctgtg ctcctgcagt   2470
ggcttgtgtt tcctgaaact ccaaggtgcc aagtattgta tcccagcatt atgagctcag   2530
aggtttaaca aaagcatgag gggttattgt gcactggaaa gagcaaggga accaggatga   2590
gttcctgccc ctggatttgg aacccatagt cttgggtgac cgtggacagg taactccttt   2650
gtactgaatt gtctgtgtat ccttctgtat tccttatctg tgaagggtca taaacatagc   2710
tgcatcacag ggtctttaca aacttaattg gagtagcttt cacataccag tcagtatttt   2770
aaggcttttt catgtatatt ctctctgtcg atcctcttgg ggcacatatt tttgttatca   2830
tgaaaagtga ggttcaggaa ggtagagata tttgtctaag atcaaccaga tagtaagaga   2890
tagagttggt ctatagattg gacaatagtc cagtttagga agtagacaga tcagaagaga   2950
aaaatacaca cccacacaca cacacaaggc gcgcgcacac acacacacac aaacacatga   3010
gtccaacgca acaagtaagg ccccagatgg acacagaaac attaaagttg gtgcaaagag   3070
ctattccagg atgggaattt ctcatctcac ctaatcgtca gaatgttttc agctgttcag   3130
ccccaccctg atacaccaaa ttgaaaccag gaggggggtc caggaaattc aattcataag   3190
ctcctggtgc tttggctgtt ccccagcgtg caaaccacac atcctgtgca gcaacttcat   3250
ttacagaggg gagcccaagg cctagcaaga gcagttagg ggacctggca gccggaggag   3310
gcggggcttg tgcgttgccc acccagtggt ggcttgggtg gctcagcctt ctctcttatt   3370
ctctgttcac ag a ttc aag ctg aag aga ggc aaa gag gcc tgc gcc ttg      3419
                Phe Lys Leu Lys Arg Gly Lys Glu Ala Cys Ala Leu
                     65                  70                  75

gac aca gtt gga tgg gtt cag agg cac aga aaa atg ctg agg cac tgc     3467
Asp Thr Val Gly Trp Val Gln Arg His Arg Lys Met Leu Arg His Cys
                80                  85                  90

ccg tca aaa aga aaa tgagcagatt tctttccatt gtgggctctg gaaaccacat     3522
Pro Ser Lys Arg Lys
            95

ggcttcacct gtccccgaaa ctaccagccc tacaccattc cttctgccct gcttttgcta   3582
ggtcacagag gatctgcttg gtcttgataa gctatgttgt tgcactttaa acatttaaat   3642
tatacaatca tcaaccccca accctctggg ctcttggatt tcagagtgaa aacttgatgg   3702
cattgag                                                            3709

      <210> 37
      <211> 673
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (67)...(450)

<400> 37
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gggcaactca ccctcactca gaggtcttct ggttctggaa acaactctag ctcagccttc     60
tccacc atg agc ctc aga ctt gat acc acc cct tcc tgt aac agt gcg       108
       Met Ser Leu Arg Leu Asp Thr Thr Pro Ser Cys Asn Ser Ala
        1               5                   10

aga cca ctt cat gcc ttg cag gtg ctg ctg ctt ctg tca ttg ctg ctg      156
Arg Pro Leu His Ala Leu Gln Val Leu Leu Leu Leu Ser Leu Leu Leu
 15                  20                  25                  30

act gct ctg gct tcc tcc acc aaa gga caa act aag aga aac ttg gcg      204
Thr Ala Leu Ala Ser Ser Thr Lys Gly Gln Thr Lys Arg Asn Leu Ala
                 35                  40                  45

aaa ggc aaa gag gaa agt cta gac agt gac ttg tat gct gaa ctc cgc      252
Lys Gly Lys Glu Glu Ser Leu Asp Ser Asp Leu Tyr Ala Glu Leu Arg
             50                  55                  60

tgc atg tgt ata aag aca acc tct gga att cat ccc aaa aac atc caa      300
Cys Met Cys Ile Lys Thr Thr Ser Gly Ile His Pro Lys Asn Ile Gln
         65                  70                  75

agt ttg gaa gtg atc ggg aaa gga acc cat tgc aac caa gtc gaa gtg      348
Ser Leu Glu Val Ile Gly Lys Gly Thr His Cys Asn Gln Val Glu Val
     80                  85                  90

ata gcc aca ctg aag gat ggg agg aaa atc tgc ctg gac cca gat gct      396
Ile Ala Thr Leu Lys Asp Gly Arg Lys Ile Cys Leu Asp Pro Asp Ala
 95                  100                 105                 110

ccc aga atc aag aaa att gta cag aaa aaa ttg gca ggt gat gaa tct      444
Pro Arg Ile Lys Lys Ile Val Gln Lys Lys Leu Ala Gly Asp Glu Ser
                115                 120                 125

gct gat taatttgttc tgtttctgcc aaacttcttt aactcccagg aagggtagaa       500
Ala Asp

ttttgaaacc ttgattttct agagttctca tttattcagg atacctattc ttactgtatt    560
aaaatttgga tatgtgtttc attctgtctc aaaaatcaca ttttattctg agaaggttgg    620
ttaaaagatg gcagaaagaa gatgaaaata aataagcctg gtttcaaccc tct           673
```

<210> 38
<211> 12
<212> PRT
<213> Homo sapiens

<400> 38
```
Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln
 1               5                   10
```

<210> 39
<211> 2545
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (40)...(414)

<400> 39

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atccaataca ggagtgactt ggaactccat tctatcact atg aag aaa agt ggt        54
                                          Met Lys Lys Ser Gly
                                           1               5

gtt ctt ttc ctc ttg ggc atc atc ttg ctg gtt ctg att gga gtg caa      102
Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val Leu Ile Gly Val Gln
                 10                  15                  20

gga acc cca gta gtg aga aag ggt cgc tgt tcc tgc atc agc acc aac      150
Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser Cys Ile Ser Thr Asn
             25                  30                  35

caa ggg act atc cac cta caa tcc ttg aaa gac ctt aaa caa ttt gcc      198
Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp Leu Lys Gln Phe Ala
         40                  45                  50

cca agc cct tcc tgc gag aaa att gaa atc att gct aca ctg aag aat      246
Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile Ala Thr Leu Lys Asn
     55                  60                  65

gga gtt caa aca tgt cta aac cca gat tca gca gat gtg aag gaa ctg      294
Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala Asp Val Lys Glu Leu
 70                  75                  80                  85

att aaa aag tgg gag aaa cag gtc agc caa aag aaa aag caa aag aat      342
Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys Lys Lys Gln Lys Asn
                 90                  95                 100

ggg aaa aaa cat caa aaa aag aaa gtt ctg aaa gtt cga aaa tct caa      390
Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys Val Arg Lys Ser Gln
            105                 110                 115

cgt tct cgt caa aag aag act aca taagagacca cttcaccaat aagtattctg     444
Arg Ser Arg Gln Lys Lys Thr Thr
        120                 125

tgttaaaaat gttctatttt aattataccg ctatcattcc aaaggaggat ggcatataat    504
acaaaggctt attaatttga ctagaaaatt taaaacatta ctctgaaatt gtaactaaag    564
ttagaaagtt gattttaaga atccaaacgt taagaattgt taaaggctat gattgtcttt    624
gttcttctac cacccaccag ttgaatttca tcatgcttaa ggccatgatt ttagcaatac    684
ccatgtctac acagatgttc acccaaccac atcccactca caacagctgc ctggaagagc    744
agccctaggc ttccacgtac tgcagcctcc agagagtatc tgaggcacat gtcagcaagt    804
cctaagcctg ttagcatgct ggtgagccaa gcagtttgaa attgagctgg acctcaccaa    864
gctgctgtgg ccatcaacct ctgtatttga atcagcctac aggcctcaca cacaatgtgt    924
ctgagagatt catgctgatt gttattgggt atcaccactg gagatcacca gtgtgtggct    984
ttcagagcct cctttctggc tttggaagcc atgtgatttc atcttgcccg ctcaggctga   1044
ccactttatt tctttttgtt ccccttgct tcattcaagt cagctcttct ccatcctacc   1104
acaatgcagt gcctttcttc tctccagtgc acctgtcata tgctctgatt tatctgagtc   1164
aactcctttc tcatcttgtc cccaacaccc cacagaagtg ctttcttctc ccaattcatc   1224
ctcactcagt ccagcttagt tcaagtcctg cctcttaaat aaacctttt ggacacacaa   1284
attatcttaa aactcctgtt tcacttggtt cagtaccaca tgggtgaaca ctcaatggtt   1344
aactaattct tgggtgttta tcctatctct ccaaccagat tgtcagctcc ttgagggcaa   1404
gagccacagt atatttccct gtttcttcca cagtgcctaa taatactgtg gaactaggtt   1464
ttaataattt tttaattgat gttgttatgg gcaggatggc aaccagacca ttgtctcaga   1524
gcaggtgctg gctctttcct ggctactcca tgttggctag cctctggtaa cctcttactt   1584
attatcttca ggacactcac tacagggacc agggatgatg caacatcctt gtctttttat   1644
gacaggatgt ttgctcagct tctccaacaa taagaagcac gtggtaaaac acttgcggat   1704
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attctggact gtttttaaaa aatatacagt ttaccgaaaa tcatataatc ttacaatgaa 1764
aaggacttta tagatcagcc agtgaccaac cttttcccaa ccatacaaaa attccttttc 1824
ccgaaggaaa agggctttct caataagcct cagctttcta agatctaaca agatagccac 1884
cgagatcctt atcgaaactc attttaggca aatatgagtt ttattgtccg tttacttgtt 1944
tcagagtttg tattgtgatt atcaattacc acaccatctc ccatgaagaa agggaacggt 2004
gaagtactaa gcgctagagg aagcagccaa gtcggttagt ggaagcatga ttggtgccca 2064
gttagcctct gcaggatgtg gaaacctcct tccaggggag gttcagtgaa ttgtgtagga 2124
gaggttgtct gtggccagaa tttaaaccta tactcacttt cccaaattga atcactgctc 2184
acactgctga tgatttagag tgctgtccgg tggagatccc acccgaacgt cttatctaat 2244
catgaaactc cctagttcct tcatgtaact tccctgaaaa atctaagtgt ttcataaatt 2304
tgagagtctg tgacccactt accttgcatc tcacaggtag acagtatata actaacaacc 2364
aaagactaca tattgtcact gacacacacg ttataatcat ttatcatata tatacataca 2424
tgcatacact ctcaaagcaa ataatttttc acttcaaaac agtattgact tgtatacctt 2484
gtaatttgaa atattttctt tgttaaaata gaatggtatc aataaataga ccattaatca 2544
g 2545

<210> 40
<211> 12
<212> PRT
<213> Homo sapiens

<400> 40
Glu Leu Cys Leu Asp Pro Lys Glu Asn Trp Val Gln
1 5 10

<210> 41
<211> 12
<212> PRT
<213> Homo sapiens

<400> 41
Glu Ile Cys Leu Asp Pro Glu Ala Pro Phe Leu Lys
1 5 10

<210> 42
<211> 12
<212> PRT
<213> Homo sapiens

<400> 42
Gln Val Cys Ala Asp Pro Ser Glu Glu Trp Val Gln
1 5 10

<210> 43
<211> 12
<212> PRT
<213> Homo sapiens

<400> 43
Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln
1 5 10

<210> 44
<211> 12
<212> PRT
<213> Homo sapiens

<400> 44
Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln
1 5 10

<210> 45

<211> 125
<212> PRT
<213> Homo sapiens

<400> 45

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Met Lys Lys Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val
 1               5                  10                  15
Leu Ile Gly Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser
            20                  25                  30
Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp
        35                  40                  45
Leu Lys Gln Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile
    50                  55                  60
Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala
65                  70                  75                  80
Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys
                85                  90                  95
Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys
            100                 105                 110
Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr
        115                 120                 125
```

<210> 46
<211> 128
<212> PRT
<213> Homo sapiens

<400> 46

```
Met Ser Leu Arg Leu Asp Thr Thr Pro Ser Cys Asn Ser Ala Arg Pro
 1               5                  10                  15
Leu His Ala Leu Gln Val Leu Leu Leu Leu Ser Leu Leu Leu Thr Ala
            20                  25                  30
Leu Ala Ser Ser Thr Lys Gly Gln Thr Lys Arg Asn Leu Ala Lys Gly
        35                  40                  45
Lys Glu Glu Ser Leu Asp Ser Asp Leu Tyr Ala Glu Leu Arg Cys Met
    50                  55                  60
Cys Ile Lys Thr Thr Ser Gly Ile His Pro Lys Asn Ile Gln Ser Leu
65                  70                  75                  80
Glu Val Ile Gly Lys Gly Thr His Cys Asn Gln Val Glu Val Ile Ala
                85                  90                  95
Thr Leu Lys Asp Gly Arg Lys Ile Cys Leu Asp Pro Asp Ala Pro Arg
            100                 105                 110
Ile Lys Lys Ile Val Gln Lys Lys Leu Ala Gly Asp Glu Ser Ala Asp
        115                 120                 125
```

<210> 47
<211> 96
<212> PRT
<213> Homo sapiens

<400> 47

```
Met Gln Ile Ile Thr Thr Ala Leu Val Cys Leu Leu Leu Ala Gly Met
 1               5                  10                  15
Trp Pro Glu Asp Val Asp Ser Lys Ser Met Gln Val Pro Phe Ser Arg
            20                  25                  30
Cys Cys Phe Ser Phe Ala Glu Gln Glu Ile Pro Leu Arg Ala Ile Leu
        35                  40                  45
Cys Tyr Arg Asn Thr Ser Ser Ile Cys Ser Asn Glu Gly Leu Ile Phe
    50                  55                  60
Lys Leu Lys Arg Gly Lys Glu Ala Cys Ala Leu Asp Thr Val Gly Trp
65                  70                  75                  80
Val Gln Arg His Arg Lys Met Leu Arg His Cys Pro Ser Lys Arg Lys
```

```
                85                  90                  95

      <210> 48
      <211> 93
      <212> PRT
      <213> Homo sapiens

      <400> 48
Met Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile
 1               5                  10                  15
Ala Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro
            20                  25                  30
Ser Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg
        35                  40                  45
Ile Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile
    50                  55                  60
Val Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp
65                  70                  75                  80
Lys Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn
                85                  90

      <210> 49
      <211> 93
      <212> PRT
      <213> Homo sapiens

      <400> 49
Met Gln Val Ser Thr Ala Ala Leu Ala Val Leu Leu Cys Thr Met Ala
 1               5                  10                  15
Leu Cys Asn Gln Val Leu Ser Ala Pro Leu Ala Ala Asp Thr Pro Thr
            20                  25                  30
Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile Pro Gln Asn Phe Ile
        35                  40                  45
Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser Lys Pro Ser Val Ile
    50                  55                  60
Phe Leu Thr Lys Arg Gly Arg Gln Val Cys Ala Asp Pro Ser Glu Glu
65                  70                  75                  80
Trp Val Gln Lys Tyr Val Ser Asp Leu Glu Leu Ser Ala
                85                  90

      <210> 50
      <211> 98
      <212> PRT
      <213> Homo sapiens

      <400> 50
Met Lys Val Ser Ala Val Leu Leu Cys Leu Leu Leu Met Thr Ala Ala
 1               5                  10                  15
Phe Asn Pro Gln Gly Leu Ala Gln Pro Asp Ala Leu Asn Val Pro Ser
            20                  25                  30
Thr Cys Cys Phe Thr Phe Ser Ser Lys Lys Ile Ser Leu Gln Arg Leu
        35                  40                  45
Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val Ile
    50                  55                  60
Phe Arg Thr Lys Leu Gly Lys Glu Ile Cys Ala Asp Pro Lys Glu Lys
65                  70                  75                  80
Trp Val Gln Asn Tyr Met Lys His Leu Gly Arg Lys Ala His Thr Leu
                85                  90                  95
Lys Thr

      <210> 51
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<211> 839
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (54)...(344)

<400> 51

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caacccagaa accaccacct ctcacgccaa agctcacacc ttcagcctcc aac atg        56
                                                            Met
                                                             1

aag gtc tcc gca gca ctt ctg tgg ctg ctg ctc ata gca gct gcc ttc      104
Lys Val Ser Ala Ala Leu Leu Trp Leu Leu Leu Ile Ala Ala Ala Phe
             5                  10                  15

agc ccc cag ggg ctc gct ggg cca gct tct gtc cca acc acc tgc tgc      152
Ser Pro Gln Gly Leu Ala Gly Pro Ala Ser Val Pro Thr Thr Cys Cys
         20                  25                  30

ttt aac ctg gcc aat agg aag ata ccc ctt cag cga cta gag agc tac      200
Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser Tyr
     35                  40                  45

agg aga atc acc agt ggc aaa tgt ccc cag aaa gct gtg atc ttc aag      248
Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe Lys
 50                  55                  60                  65

acc aaa ctg gcc aag gat atc tgt gcc gac ccc aag aag aag tgg gtg      296
Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp Val
                 70                  75                  80

cag gat tcc atg aag tat ctg gac caa aaa tct cca act cca aag cca      344
Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys Pro
             85                  90                  95

taaataatca ccatttttga aaccaaacca gagcctgagt gttgcctaat ttgttttccc    404
ttcttacaat gcattctgag gtaacctcat tatcagtcca aagggcatgg gttttattat    464
atatatatat atatattttt ttttaaaaaa aaacgtattg catttaattt attgaggctt    524
taaaacttat cctccatgaa tatcagttat ttttaaactg taaagctttg tgcagattct    584
ttacccccctg ggagccccaa ttcgatcccc tgtcacgtgt gggcaatgtt ccccctctcc    644
tctcttcctc cctggaatct tgtaaaggtc ctggcaaaga tgatcagtat gaaaatgtca    704
ttgttcttgt gaacccaaag tgtgactcat taaatggaag taatgttgtt ttaggaatac    764
ataaagtatg tgcatatttt attatagtca ctagttgtaa ttttttgtg ggaaatccac    824
actgagctga ggggg                                                    839
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<210> 52
<211> 114
<212> PRT
<213> Homo sapiens

<400> 52

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Met Ser Leu Leu Ser Ser Arg Ala Ala Arg Val Pro Gly Pro Ser Ser
 1               5                  10                  15
Ser Leu Cys Ala Leu Leu Val Leu Leu Leu Leu Leu Thr Gln Pro Gly
            20                  25                  30
Pro Ile Ala Ser Ala Gly Pro Ala Ala Ala Val Leu Arg Glu Leu Arg
        35                  40                  45
Cys Val Cys Leu Gln Thr Thr Gln Gly Val His Pro Lys Met Ile Ser
    50                  55                  60
Asn Leu Gln Val Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu Val
```

```
65                  70                  75                  80
Val Ala Ser Leu Lys Asn Gly Lys Glu Ile Cys Leu Asp Pro Glu Ala
                85                  90                  95
Pro Phe Leu Lys Lys Val Ile Gln Lys Ile Leu Asp Gly Gly Asn Lys
            100                 105                 110
Glu Asn
```

<210> 53
<211> 107
<212> PRT
<213> Homo sapiens

<400> 53

```
Met Ala Arg Ala Thr Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu
 1               5                  10                  15
Arg Val Ala Leu Leu Leu Leu Leu Leu Val Ala Ala Ser Arg Arg Ala
            20                  25                  30
Ala Gly Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr
        35                  40                  45
Leu Gln Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser
    50                  55                  60
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn
65                  70                  75                  80
Gly Gln Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile
                85                  90                  95
Ile Glu Lys Met Leu Lys Asn Gly Lys Ser Asn
            100                 105
```

<210> 54
<211> 98
<212> PRT
<213> Homo sapiens

<400> 54

```
Met Asn Pro Ser Ala Ala Val Ile Phe Cys Leu Ile Leu Leu Gly Leu
 1               5                  10                  15
Ser Gly Thr Gln Gly Ile Pro Leu Ala Arg Thr Val Arg Cys Asn Cys
            20                  25                  30
Ile His Ile Asp Asp Gly Pro Val Arg Met Arg Ala Ile Gly Lys Leu
        35                  40                  45
Glu Ile Ile Pro Ala Ser Leu Ser Cys Pro Arg Val Glu Ile Ile Ala
    50                  55                  60
Thr Met Lys Lys Asn Asp Glu Gln Arg Cys Leu Asn Pro Glu Ser Lys
65                  70                  75                  80
Thr Ile Lys Asn Leu Met Lys Ala Phe Ser Gln Lys Arg Ser Lys Arg
                85                  90                  95
Ala Pro
```

<210> 55
<211> 1041
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (18)...(338)

<400> 55

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cccgcctgct gagcccc atg gcc cgc gct gct ctc tcc gcc gcc ccc agc        50
                  Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser
```

```
                1               5                  10

aat ccc cgg ctc ctg cga gtg gca ctg ctg ctc ctg ctc ctg gta gcc      98
Asn Pro Arg Leu Leu Arg Val Ala Leu Leu Leu Leu Leu Leu Val Ala
            15                  20                  25

gct ggc cgg cgc gca gca gga gcg tcc gtg gcc act gaa ctg cgc tgc     146
Ala Gly Arg Arg Ala Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys
        30                  35                  40

cag tgc ttg cag acc ctg cag gga att cac ccc aag aac atc caa agt     194
Gln Cys Leu Gln Thr Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser
    45                  50                  55

gtg aac gtg aag tcc ccc gga ccc cac tgc gcc caa acc gaa gtc ata     242
Val Asn Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile
60                  65                  70                  75

gcc aca ctc aag aat ggg cgg aaa gct tgc ctc aat cct gca tcc ccc     290
Ala Thr Leu Lys Asn Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro
                80                  85                  90

ata gtt aag aaa atc atc gaa aag atg ctg aac agt gac aaa tcc aac     338
Ile Val Lys Lys Ile Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn
            95                  100                 105

tgaccagaag ggaggaggaa gctcactggt ggctgttcct gaaggaggcc ctgcccttat   398
aggaacagaa gaggaaagag agacacagct gcagaggcca cctggattgt gcctaatgtg   458
tttgagcatc gcttaggaga agtcttctat ttatttattt attcattagt tttgaagatt   518
ctatgttaat attttaggtg taaaataatt aagggtatga ttaactctac ctgcacactg   578
tcctattata ttcattcttt ttgaaatgtc aaccccaagt tagttcaatc tggattcata   638
tttaatttga aggtagaatg ttttcaaatg ttctccagtc attatgttaa tatttctgag   698
gagcctgcaa catgccagcc actgtgatag aggctggcgg atccaagcaa atggccaatg   758
agatcattgt gaaggcaggg gaatgtatgt gcacatctgt tttgtaactg tttagatgaa   818
tgtcagttgt tatttattga aatgatttca cagtgtgtgg tcaacatttc tcatgttgaa   878
actttaagaa ctaaaatgtt ctaaatatcc cttggacatt ttatgtcttt cttgtaaggc   938
atactgcctt gtttaatggt agttttacag tgtttctggc ttagaacaaa ggggcttaat   998
tattgatgtt ttcatagaga atataaaaat aaagcactta tag                    1041

      <210> 56
      <211> 93
      <212> PRT
      <213> Homo sapiens

      <400> 56
Met Asn Ala Lys Val Val Val Val Leu Val Leu Val Leu Thr Ala Leu
 1               5                  10                  15
Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys
            20                  25                  30
Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys
        35                  40                  45
Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys
    50                  55                  60
Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln
65                  70                  75                  80
Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met
                85                  90

      <210> 57
      <211> 107
      <212> PRT
      <213> Homo sapiens
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<400> 57

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Met Ala Arg Ala Ala Leu Ser Ala Ala Pro Ser Asn Pro Arg Leu Leu
 1               5                  10                  15
Arg Val Ala Leu Leu Leu Leu Leu Leu Val Ala Ala Gly Arg Arg Ala
            20                  25                  30
Ala Gly Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr
        35                  40                  45
Leu Gln Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser
    50                  55                  60
Pro Gly Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn
65                  70                  75                  80
Gly Arg Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys Lys Ile
                85                  90                  95
Ile Glu Lys Met Leu Asn Ser Asp Lys Ser Asn
            100                 105
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<210> 58
<211> 1560
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (102)...(398)

<400> 58

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ctccataagg cacaaacttt cagagacagc agagcacaca agcttctagg acaagagcca     60
ggaagaaacc accggaagga accatctcac tgtgtgtaaa c atg act tcc aag ctg    116
                                              Met Thr Ser Lys Leu
                                               1               5

gcc gtg gct ctc ttg gca gcc ttc ctg att tct gca gct ctg tgt gaa      164
Ala Val Ala Leu Leu Ala Ala Phe Leu Ile Ser Ala Ala Leu Cys Glu
                10                  15                  20

ggt gca gtt ttg cca agg agt gct aaa gaa ctt aga tgt cag tgc ata      212
Gly Ala Val Leu Pro Arg Ser Ala Lys Glu Leu Arg Cys Gln Cys Ile
            25                  30                  35

aag aca tac tcc aaa cct ttc cac ccc aaa ttt atc aaa gaa ctg aga      260
Lys Thr Tyr Ser Lys Pro Phe His Pro Lys Phe Ile Lys Glu Leu Arg
        40                  45                  50

gtg att gag agt gga cca cac tgc gcc aac aca gaa att att gta aag      308
Val Ile Glu Ser Gly Pro His Cys Ala Asn Thr Glu Ile Ile Val Lys
    55                  60                  65

ctt tct gat gga aga gag ctc tgt ctg gac ccc aag gaa aac tgg gtg      356
Leu Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro Lys Glu Asn Trp Val
70                  75                  80                  85

cag agg gtt gtg gag aag ttt ttg aag agg gct gag aat tca              398
Gln Arg Val Val Glu Lys Phe Leu Lys Arg Ala Glu Asn Ser
                90                  95

taaaaaaatt cattctctgt ggtatccaag aatcagtgaa gatgccagtg aaacttcaag    458
caaatctact tcaacacttc atgtattgtg tgggtctgtt gtagggttgc cagatgcaat    518
acaagattcc tggttaaatt tgaatttcag taaacaatga atagtttttc attgtaccat    578
gaaatatcca gaacatactt atatgtaaag tattatttat ttgaatctac aaaaaacaac    638
aaataatttt taaatataag gattttccta gatattgcac gggagaatat acaaatagca    698
aaattgggcc aagggccaag agaatatccg aactttaatt tcaggaattg aatgggtttg    758
ctagaatgtg atatttgaag catcacataa aaatgatggg acaataaatt ttgccataaa    818
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gtcaaattta gctggaaatc ctggattttt ttctgttaaa tctggcaacc ctagtctgct 878
agccaggatc cacaagtcct tgttccactg tgccttggtt tctcctttat ttctaagtgg 938
aaaaagtatt agccaccatc ttacctcaca gtgatgttgt gaggacatgt ggaagcactt 998
taagtttttt catcataaca taaattattt tcaagtgtaa cttattaacc tatttattat 1058
ttatgtattt atttaagcat caaatatttg tgcaagaatt tggaaaaata gaagatgaat 1118
cattgattga atagttataa agatgttata gtaaatttat tttattttag atattaaatg 1178
atgttttatt agataaattt caatcagggt ttttagatta aacaaacaaa caattgggta 1238
cccagttaaa ttttcatttc agatatacaa caaataattt tttagtataa gtacattatt 1298
gtttatctga aattttaatt gaactaacaa tcctagtttg atactcccag tcttgtcatt 1358
gccagctgtg ttggtagtgc tgtgttgaat tacggaataa tgagttagaa ctattaaaac 1418
agccaaaact ccacagtcaa tattagtaat ttcttgctgg ttgaaacttg tttattatgt 1478
acaaatagat tcttataata ttatttaaat gactgcattt ttaaatacaa ggctttatat 1538
ttttaacttt aaaaaaaacc gg 1560

<210> 59
<211> 15
<212> PRT
<213> Homo sapiens

<400> 59
Asn Leu Gln Val Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu
1 5 10 15

<210> 60
<211> 14
<212> PRT
<213> Homo sapiens

<400> 60
Val Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala
1 5 10

<210> 61
<211> 15
<212> PRT
<213> Homo sapiens

<400> 61
Val Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala Val
1 5 10 15

<210> 62
<211> 15
<212> PRT
<213> Homo sapiens

<400> 62
Glu Ser Tyr Arg Arg Ile Thr Asn Ile Gln Cys Pro Lys Glu Ala
1 5 10 15

<210> 63
<211> 15
<212> PRT
<213> Homo sapiens

<400> 63
Glu Ser Tyr Arg Arg Thr Thr Ser Ser His Cys Pro Arg Glu Ala
1 5 10 15

<210> 64
<211> 15
<212> PRT

<213> Homo sapiens

<400> 64
Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val
1 5 10 15

<210> 65
<211> 12
<212> PRT
<213> Homo sapiens

<400> 65
Glu Ile Cys Ala Asp Pro Lys Glu Lys Trp Val Gln
1 5 10

<210> 66
<211> 12
<212> PRT
<213> Homo sapiens

<400> 66
Glu Ile Cys Ala Asp Pro Thr Gln Lys Trp Val Gln
1 5 10

<210> 67
<211> 12
<212> PRT
<213> Homo sapiens

<400> 67
Glu Ile Cys Ala Asp Pro Lys Glu Arg Trp Val Arg
1 5 10

<210> 68
<211> 16
<212> PRT
<213> Homo sapiens

<400> 68
Met Ile Cys Ala Asp Pro Lys Xaa Ala Ala Xaa Ala Ala Trp Val Gln
1 5 10 15

<210> 69
<211> 15
<212> PRT
<213> Homo sapiens

<400> 69
Ser Val Asn Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu
1 5 10 15

<210> 70
<211> 15
<212> PRT
<213> Homo sapiens

<400> 70
Ser Val Lys Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr Glu
1 5 10 15

<210> 71
<211> 15

<212> PRT
<213> Homo sapiens

<400> 71
Ser Val Asn Val Arg Ser Pro Gly Pro His Cys Ala Gln Thr Glu
1 5 10 15

<210> 72
<211> 12
<212> PRT
<213> Homo sapiens

<400> 72
Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys
1 5 10

<210> 73
<211> 12
<212> PRT
<213> Homo sapiens

<400> 73
Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys
1 5 10

<210> 74
<211> 12
<212> PRT
<213> Homo sapiens

<400> 74
Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Gln
1 5 10

<210> 75
<211> 12
<212> PRT
<213> Homo sapiens

<400> 75
Lys Ser Tyr Lys Ile Ile Thr Ser Ser Lys Cys Pro
1 5 10

<210> 76
<211> 661
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (32)...(331)

<400> 76
tcaaactgaa gctcgcactc tcgcctccag c atg aaa gtc tct gcc gcc ctt 52
Met Lys Val Ser Ala Ala Leu
1 5

ctg tgc ctg ctg ctc ata gca gcc acc ttc att ccc caa ggg ctc gct 100
Leu Cys Leu Leu Leu Ile Ala Ala Thr Phe Ile Pro Gln Gly Leu Ala
10 15 20

cag cca gat gca atc aat gcc cca gtc acc tgc tgc tat aac ttc acc 148

```
Gln Pro Asp Ala Ile Asn Ala Pro Val Thr Cys Cys Tyr Asn Phe Thr
     25                  30                  35

aat agg aag atc tca gtg cag agg ctc gcg agc tat aga aga atc acc      196
Asn Arg Lys Ile Ser Val Gln Arg Leu Ala Ser Tyr Arg Arg Ile Thr
 40                  45                  50                  55

agc agc aag tgt ccc aaa gaa gct gtg atc ttc aag acc att gtg gcc      244
Ser Ser Lys Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Ile Val Ala
                 60                  65                  70

aag gag atc tgt gct gac ccc aag cag aag tgg gtt cag gat tcc atg      292
Lys Glu Ile Cys Ala Asp Pro Lys Gln Lys Trp Val Gln Asp Ser Met
             75                  80                  85

gac cac ctg gac aag caa acc caa act ccg aag act tga acactcactc      341
Asp His Leu Asp Lys Gln Thr Gln Thr Pro Lys Thr  *
         90                  95

cacaacccaa gaatctgcag ctaacttatt ttcccctagc tttccccaga catcctgttt    401
tattttatta taatgaattt tgtttgttga tgtgaaacat tatgccttaa gtaatgttaa    461
ttcttattta agttattgat gttttaagtt tatctttcat ggtactagtg ttttttagat    521
acagagactt ggggaaattg cttttcctct tgaaccacag ttctacccct gggatgtttt    581
gagggtcttt gcaagaatca tttttttaac attccaatgc atttaataca aagaattgct    641
aaaatattat tgtggaaatg                                               661
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<210> 77
<211> 1847
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (80)...(346)

<400> 77

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tctccgtcag ccgcattgcc cgctcggcgt ccggcccccg acccgtgctc gtccgcccgc     60
ccgcccgccc gcccgcgcc atg aac gcc aag gtc gtg gtc gtg ctg gtc ctc     112
                    Met Asn Ala Lys Val Val Val Val Leu Val Leu
                     1               5                  10

gtg ctg acc gcg ctc tgc ctc agc gac ggg aag ccc gtc agc ctg agc      160
Val Leu Thr Ala Leu Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser
            15                  20                  25

tac aga tgc cca tgc cga ttc ttc gaa agc cat gtt gcc aga gcc aac      208
Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn
        30                  35                  40

gtc aag cat ctc aaa att ctc aac act cca aac tgt gcc ctt cag att      256
Val Lys His Leu Lys Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile
    45                  50                  55

gta gcc cgg ctg aag aac aac aac aga caa gtg tgc att gac ccg aag      304
Val Ala Arg Leu Lys Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys
60                  65                  70                  75

cta aag tgg att cag gag tac ctg gag aaa gct tta aac aag              346
Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn Lys
                80                  85

taagcacaac agccaaaaag gactttccgc tagacccact cgaggaaaac taaaaccttg    406
```

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tgagagatga aagggcaaag acgtggggga gggggcctta accatgagga ccaggtgtgt     466
gtgtggggtg ggcacattga tctgggatcg ggcctgaggt ttgcagcatt tagaccctgc     526
atttatagca tacggtatga tattgcagct tatattcatc catgccctgt acctgtgcac     586
gttggaactt ttatttactgg ggtttttcta agaaagaaat tgtattatca acagcatttt     646
caagcagtta gttcgttcat gatcatcaca atcatcatca ttctcattct catttttaa      706
atcaacgagt acttcaagat ctgaatttgg cttgtttgga gcatctcctc tgctcccctg     766
gggagtctgg gcacagtcag gtggtggctt aacagggagc tggaaaaagt gtcctttctt     826
cagacactga ggctcccgca gcagcgcccc tcccaagagg aaggcctctg tggcactcag     886
ataccgactg gggctggggc gccgccactg ccttcacctc ctctttcaaa cctcagtgat     946
tggctctgtg ggctccatgt agaagccact attactggga ctgtctcaga gacccctctc    1006
ccagctattc ctactctctc cccgactccg agagcatgct taatcttgct tctgcttctc    1066
atttctgtag cctgatcagc gccgcaccag ccgggaagag ggtgattgct ggggctcgtg    1126
ccctgcatcc ctctcctccc agggcctgcc ccacagctcg ggccctctgt gagatccgtc    1186
tttggcctcc tccagaatgg agctggccct ctcctgggga tgtgtaatgg tccccctgct    1246
tacccgcaaa agacaagtct ttacagaatc aaatgcaatt ttaaatctga gagctcgctt    1306
gagtgactgg gtttgtgatt gcctctgaag cctatgtatg ccatggaggc actaacaaac    1366
tctgaggttt ccgaaatcag aagcgaaaaa atcagtgaat aaaccatcat cttgccacta    1426
ccccctcctg aagccacagc aggggttcag gttccaatca gaactgttgg caaggtgaca    1486
tttccatgca tagatgcgat ccacagaagg tcctggtggt atttgtaact ttttgcaagg    1546
catttttta tatatatttt tgtgcacatt ttttttacg attctttaga aaacaaatgt      1606
atttcaaaat atatttatag tcgaacaagt catatatatg aatgagagcc atatgaatgt    1666
cagtagttta tacttctcta ttatctcaaa ctactggcaa tttgtaaaga aatatatatg    1726
atatataaat gtgattgcag cttttcaatg ttagccacag tgtatttttt cacttgtact    1786
aaaattgtat caaatgtgac attatatgca ctagcaataa aatgctaatt gtttcatggt    1846
a                                                                    1847
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<210> 78
<211> 1160
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (27)...(299)

<400> 78

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cctccgacag cctctccaca ggtacc atg aag gtc tcc gcg gca cgc ctc gct      53
                              Met Lys Val Ser Ala Ala Arg Leu Ala
                               1               5

gtc atc ctc att gct act gcc ctc tgc gct cct gca tct gcc tcc cca      101
Val Ile Leu Ile Ala Thr Ala Leu Cys Ala Pro Ala Ser Ala Ser Pro
 10                  15                  20                  25

tat tcc tcg gac acc aca ccc tgc tgc ttt gcc tac att gcc cgc cca      149
Tyr Ser Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Ile Ala Arg Pro
                 30                  35                  40

ctg ccc cgt gcc cac atc aag gag tat ttc tac acc agt ggc aag tgc      197
Leu Pro Arg Ala His Ile Lys Glu Tyr Phe Tyr Thr Ser Gly Lys Cys
             45                  50                  55

tcc aac cca gca gtc gtc ttt gtc acc cga aag aac cgc caa gtg tgt      245
Ser Asn Pro Ala Val Val Phe Val Thr Arg Lys Asn Arg Gln Val Cys
         60                  65                  70

gcc aac cca gag aag aaa tgg gtt cgg gag tac atc aac tct ttg gag      293
Ala Asn Pro Glu Lys Lys Trp Val Arg Glu Tyr Ile Asn Ser Leu Glu
     75                  80                  85

atg agc taggatggag agtccttgaa cctgaactta cacaaatttg cctgtttctg      349
Met Ser
```

90

```
cttgctcttg tcctagcttg ggaggcttcc cctcactatc ctaccccacc cgctccttga     409
agggcccaga ttctgaccac gacgagcagc agttacaaaa accttcccca ggctggacgt     469
ggtggctcag ccttgtaatc ccagcacttt gggaggccaa ggtgggtgga tcacttgagg     529
tcaggagttc gagacagcct ggccaacatg atgaaacccc atgtgtacta aaaatacaaa     589
aaattagccg ggcgtggtag cgggcgcctg tagtcccagc tactcgggag gctgaggcag     649
gagaatggcg tgaacccggg agcggagctt gcagtgagcc gagatcgcgc cactgcactc     709
cagcctgggc gacagagcga gactccgtct caaaaaaaaa aaaaaaaaaa aaaaaaatac     769
aaaaattagc cgcgtggtgg cccacgcctg taatcccagc tactcgggag gctaaggcag     829
gaaaattgtt tgaacccagg aggtggaggc tgcagtgagc tgagattgtg ccacttcact     889
ccagcctggg tgacaaagtg agactccgtc acaacaacaa caacaaaaag cttccccaac     949
taaagcctag aagagcttct gaggcgctgc tttgtcaaaa ggaagtctct aggttctgag    1009
ctctggcttt gccttggctt tgcaagggct ctgtgacaag gaaggaagtc agcatgcctc    1069
tagaggcaag gaagggagga acactgcact cttaagcttc cgccgtctca acccctcaca    1129
ggagcttact ggcaaacatg aaaaatcggg g                                   1160
```

<210> 79
<211> 696
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (109)...(384)

<400> 79

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ttccccccccc ccccccccccc ccccgcccga gcacaggaca cagctgggtt ctgaagcttc      60
tgagttctgc agcctcacct ctgagaaaac ctcttttcca ccaatacc atg aag ctc       117
                                                    Met Lys Leu
                                                     1

tgc gtg act gtc ctg tct ctc ctc atg cta gta gct gcc ttc tgc tct        165
Cys Val Thr Val Leu Ser Leu Leu Met Leu Val Ala Ala Phe Cys Ser
     5                  10                  15

cca gcg ctc tca gca cca atg ggc tca gac cct ccc acc gcc tgc tgc        213
Pro Ala Leu Ser Ala Pro Met Gly Ser Asp Pro Pro Thr Ala Cys Cys
 20                  25                  30                  35

ttt tct tac acc gcg agg aag ctt cct cgc aac ttt gtg gta gat tac        261
Phe Ser Tyr Thr Ala Arg Lys Leu Pro Arg Asn Phe Val Val Asp Tyr
                 40                  45                  50

tat gag acc agc agc ctc tgc tcc cag cca gct gtg gta ttc caa acc        309
Tyr Glu Thr Ser Ser Leu Cys Ser Gln Pro Ala Val Val Phe Gln Thr
             55                  60                  65

aaa aga agc aag caa gtc tgt gct gat ccc agt gaa tcc tgg gtc cag        357
Lys Arg Ser Lys Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln
         70                  75                  80

gag tac gtg tat gac ctg gaa ctg aac tgagctgctc agagacagga              404
Glu Tyr Val Tyr Asp Leu Glu Leu Asn
     85                  90

agtcttcagg gaaggtcacc tgagcccgga tgcttctcca tgagacacat ctcctccata     464
ctcaggactc ctctccgcag ttcctgtccc ttctcttaat ttaatctttt ttatgtgccg     524
tgttattgta ttaggtgtca tttccattat ttatattagt ttagccaaag gataagtgtc     584
ctatggggat ggtccactgt cactgtttct ctgctgttgc aaatacatgg ataacacatt     644
tgattctgtg tgttttccat aataaaactt taaaataaaa tgcagacagt ta             696
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<210> 80
<211> 2738
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (123)...(353)

<400> 80

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gaacaaccca gaaaccttca cctctcatgc tgaagctcac acccttgccc tccaagatga     60
aggtttctgc agcgcttctg tgcctgctgc tcatggcagc cactttcagc cctcagggac    120
tt gct cag cca gat tca gtt tcc att cca atc acc tgc tgc ttt aac       167
   Ala Gln Pro Asp Ser Val Ser Ile Pro Ile Thr Cys Cys Phe Asn
    1               5                  10                  15

gtg atc aat agg aaa att cct atc cag agg ctg gag agc tac aca aga      215
Val Ile Asn Arg Lys Ile Pro Ile Gln Arg Leu Glu Ser Tyr Thr Arg
                20                  25                  30

atc acc aac atc caa tgt ccc aag gaa gct gtg atc ttc aag acc caa      263
Ile Thr Asn Ile Gln Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Gln
            35                  40                  45

cgg ggc aag gag gtc tgt gct gac ccc aag gag aga tgg gtc agg gat      311
Arg Gly Lys Glu Val Cys Ala Asp Pro Lys Glu Arg Trp Val Arg Asp
        50                  55                  60

tcc atg aag cat ctg gac caa ata ttt caa aat ctg aag cca              353
Ser Met Lys His Leu Asp Gln Ile Phe Gln Asn Leu Lys Pro
    65                  70                  75

tgagccttca tacatggact gagagtcaga gcttgaagaa aagcttattt attttcccca    413
acctccccca ggtgcagtgt gacattattt tattataaca tccacaaaga gattattttt    473
aaataattta aagcataata tttcttaaaa agtatttaat tatatttaag ttgttgatgt    533
tttaactcta tctgtcatac atcctagtga atgtaaaatg caaaatcctg gtgatgtgtt    593
ttttgttttt gttttcctgt gagctcaact aagttcacgg caaaatgtca ttgttctccc    653
tcctacctgt ctgtagtgtt gtggggtcct cccatggatc atcaaggtga aacactttgg    713
tattctttgg caatcagtgc tcctgtaagt caaatgtgtg ctttgtactg ctgttgttga    773
aattgatgtt actgtatata actatggaat tttgaaaaaa aatttcaaaa agaaaaaaat    833
atatataatt taaaactaag aaaaaaaaaa aaaaaaaaaa aaaaaggttt ctattgactt    893
gggttaatcg tgtgaccgcg gtggctggca cgaaattgac caaccctggg gttagtatag    953
cttagttaaa ctttcgttta ttgctaaagg ttaatcactg ctgtttcccg tgggggtgtg   1013
gctaggctaa gcgttttgag ctgcattgct gcgtgcttga tgcttgtccc ttttgatcgt   1073
ggtgatttag agggtgaact cactggaatg gggatgcttg catgtgtaat cttactaaga   1133
gctaatagaa aggctaggac caaaccagaa acctccaatt ctcatgtgga agcccatgcc   1193
ctcaccctcc aacatgaaag cctctgcagc acttctgtgt ctgctgctca cagcagctgc   1253
tttcagcccc caggggcttg ctcagccagt tgggatttaat acttcaacta cctgctgcta   1313
cagatttatc aataagaaaa tccctaagca gaggctggag agctacagaa ggaccaccag   1373
tagccactgt ccccgggaag ctgtaatctt caagaccaaa ctggacaagg agatctgtgc   1433
tgaccccaca cagaagtggg tccaggactt tatgaagcac ctggacaaga aaacccaaac   1493
tccaaagctt tgaacattca tgactgaact gaaaacaagc catgacttga gaaacaaata   1553
atttgtatac cctgtccttt ctcagagtgg ttctgagatt attttaatct aattctaagg   1613
aatatgagct ttatgtaata atgtgaatca tggtttttct tagtagattt taaaagttat   1673
taatatttta atttaatctt ccatggattt tggtgggttt tgaacataaa gccttggatg   1733
tatatgtcat ctcagtgctg taaaaactgt gggatgctcc tcccttctct acctcatggg   1793
ggtattgtat aagtccttgc aagaatcagt gcaaagattt gctttaattg ttaagatatg   1853
atgtccctat ggaagcatat tgttattata taattacata tttgcatatg tatgactccc   1913
aaattttcac ataaaataga tttttgtata acaaaaaaaa aaaaaaaaaa aaggacacgg   1973
gcagcagaca gtggtcagtc ctttcttggc tctgctgaca ctcgagccca cattccgtca   2033
cctgctcaga atcatgcagg tctccactgc tgcccttgct gtcctcctct gcaccatggc   2093
tctctgcaac cagttctctg catcacttgc tgctgacacg ccgaccgcct gctgcttcag   2153
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ctacacctcc cggcagattc cacagaattt catagctgac tactttgaga cgagcagcca   2213
gtgctccaag cccggtgtca tcttcctaac caagcgaagc cggcaggtct gtgctgaccc   2273
cagtgaggag tgggtccaga aatatgtcag cgacctggag ctgagtgcct gaggggtcca   2333
gaagcttcga ggcccagcga cctcggtggg cccagtgggg aggagcagga gcctgagcct   2393
tgggaacatg cgtgtgacct ccacagctac ctcttctatg gactggttgt tgccaaacag   2453
ccacactgtg ggactcttct taacttaaat tttaatttat ttatactatt tagtttttgt   2513
aatttatttt cgatttcaca gtgtgtttgt gattgtttgc tctgagagtt cccctgtccc   2573
ctccccccttc cctcacaccg cgtctggtga caaccgagtg gctgtcatca gcctgtgtag   2633
gcagtcatgg caccaaagcc accagactga caaatgtgta tcggatgctt ttgttcaggg   2693
ctgtgatcgg cctggggaaa taataaagat gctcttttaa aaggt                   2738
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<210> 81
<211> 1085
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (329)...(625)

<400> 81

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ggtttctatt gacttgggtt aatcgtgtga ccgcggtggc tggcacgaaa ttgaccaacc     60
ctggggttag tatagcttag ttaaactttc gtttattgct aaaggttaat cactgctgtt    120
tcccgtgggg gtgtggctag gctaagcgtt ttgagctgca ttgctgcgtg cttgatgctt    180
gtccctttg atcgtggtga tttagagggt gaactcactg gaatggggat gcttgcatgt     240
gtaatcttac taagagctaa tagaaaggct aggaccaaac cagaaacctc caattctcat    300
gtggaagccc atgccctcac cctccaac atg aaa gcc tct gca gca ctt ctg       352
                              Met Lys Ala Ser Ala Ala Leu Leu
                                1               5

tgt ctg ctg ctc aca gca gct gct ttc agc ccc cag ggg ctt gct cag      400
Cys Leu Leu Leu Thr Ala Ala Ala Phe Ser Pro Gln Gly Leu Ala Gln
     10                  15                  20

cca gtt ggg att aat act tca act acc tgc tgc tac aga ttt atc aat      448
Pro Val Gly Ile Asn Thr Ser Thr Thr Cys Cys Tyr Arg Phe Ile Asn
 25                  30                  35                  40

aag aaa atc cct aag cag agg ctg gag agc tac aga agg acc acc agt      496
Lys Lys Ile Pro Lys Gln Arg Leu Glu Ser Tyr Arg Arg Thr Thr Ser
                 45                  50                  55

agc cac tgt ccc cgg gaa gct gta atc ttc aag acc aaa ctg gac aag      544
Ser His Cys Pro Arg Glu Ala Val Ile Phe Lys Thr Lys Leu Asp Lys
             60                  65                  70

gag atc tgt gct gac ccc aca cag aag tgg gtc cag gac ttt atg aag      592
Glu Ile Cys Ala Asp Pro Thr Gln Lys Trp Val Gln Asp Phe Met Lys
         75                  80                  85

cac ctg gac aag aaa acc caa act cca aag ctt tgaacattca tgactgaact    645
His Leu Asp Lys Lys Thr Gln Thr Pro Lys Leu
     90                  95

gaaaacaagc catgacttga gaaacaaata atttgtatac cctgtccttt ctcagagtgg    705
ttctgagatt attttaatct aattctaagg aatatgagct ttatgtaata atgtgaatca    765
tggtttttct tagtagattt taaaagttat taatatttta atttaatctt ccatggattt    825
tggtgggttt tgaacataaa gccttggatg tatatgtcat ctcagtgctg taaaaactgt    885
gggatgctcc tcccttctct acctcatggg ggtattgtat aagtccttgc aagaatcagt    945
gcaaagattt gctttaattg ttaagatatg atgtccctat ggaagcatat tgttattata   1005
taattacata tttgcatatg tatgactccc aaattttcac ataaaataga tttttgtata   1065
acaaaaaaaa aaaaaaaaaa                                               1085
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<210> 82
<211> 775
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (84)...(359)

<400> 82

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aaggacacgg gcagcagaca gtggtcagtc ctttcttggc tctgctgaca ctcgagccca     60
cattccgtca cctgctcaga atc atg cag gtc tcc act gct gcc ctt gct gtc     113
                         Met Gln Val Ser Thr Ala Ala Leu Ala Val
                          1               5                  10

ctc ctc tgc acc atg gct ctc tgc aac cag ttc tct gca tca ctt gct      161
Leu Leu Cys Thr Met Ala Leu Cys Asn Gln Phe Ser Ala Ser Leu Ala
                 15                  20                  25

gct gac acg ccg acc gcc tgc tgc ttc agc tac acc tcc cgg cag att      209
Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser Arg Gln Ile
             30                  35                  40

cca cag aat ttc ata gct gac tac ttt gag acg agc agc cag tgc tcc      257
Pro Gln Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser Gln Cys Ser
         45                  50                  55

aag ccc ggt gtc atc ttc cta acc aag cga agc cgg cag gtc tgt gct      305
Lys Pro Gly Val Ile Phe Leu Thr Lys Arg Ser Arg Gln Val Cys Ala
     60                  65                  70

gac ccc agt gag gag tgg gtc cag aaa tat gtc agc gac ctg gag ctg      353
Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser Asp Leu Glu Leu
 75                  80                  85                  90

agt gcc tgaggggtcc agaagcttcg aggcccagcg acctcggtgg gcccagtggg      409
Ser Ala


gaggagcagg agcctgagcc ttgggaacat gcgtgtgacc tccacagcta cctcttctat    469
ggactggttg ttgccaaaca gccacactgt gggactcttc ttaacttaaa ttttaattta    529
tttatactat ttagtttttg taatttattt tcgatttcac agtgtgtttg tgattgtttg    589
ctctgagagt tcccctgtcc cctccccctt ccctcacacc gcgtctggtg acaaccgagt    649
ggctgtcatc agcctgtgta ggcagtcatg gcaccaaagc caccagactg acaaatgtgt    709
atcggatgct tttgttcagg gctgtgatcg gcctggggaa ataataaaga tgctctttta    769
aaaggt                                                               775
```

<210> 83
<211> 98
<212> PRT
<213> Homo sapiens

<400> 83

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Met Lys Val Ser Ala Val Leu Leu Cys Leu Leu Leu Met Thr Ala Ala
 1               5                  10                  15
Phe Asn Pro Gln Gly Leu Ala Gln Pro Asp Ala Leu Asn Val Pro Ser
            20                  25                  30
Thr Cys Cys Phe Thr Phe Ser Ser Lys Lys Ile Ser Leu Gln Arg Leu
        35                  40                  45
Lys Ser Tyr Val Ile Thr Thr Ser Arg Cys Pro Gln Lys Ala Val Ile
    50                  55                  60
Phe Arg Thr Lys Leu Gly Lys Glu Ile Cys Ala Asp Pro Lys Glu Lys
```

65 70 75 80
Trp Val Gln Asn Tyr Met Lys His Leu Gly Arg Lys Ala His Thr Leu
85 90 95
Lys Thr

<210> 84
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> A region within a peptide of a chemokine, a variant, or a derivative thereof.

<221> SITE
<222> 1
<223> Xaa is Ala or Leu.

<221> SITE
<222> 4
<223> Xaa is Lys, Ser or Thr.

<221> SITE
<222> 5
<223> Xaa is any amino acid.

<221> SITE
<222> 6
<223> Xaa is Lys, Glu, Ser or Arg.

<221> SITE
<222> 8
<223> Xaa is Val or Ile.

<400> 84
Xaa Asp Pro Xaa Xaa Xaa Trp Xaa Gln
1 5

<210> 85
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> A chemokine variant.

<400> 85
Cys Leu Asp Pro Lys Gln Lys Trp Ile Gln
1 5 10